

ABSTRACT

A method and device for measuring vibration frequency of a multi-cantilever which eliminate the need of incorporating an exciting or detecting element in each cantilever and simplify the structure of a cantilever array by means of optical pumping and optical measurement, and can provide high Q values and diversities of high-frequency operations and modification methods to the cantilevers. A cantilever array (11) in which the natural frequencies of cantilevers ( $2 \sim n$ ) are different is used, and their natural vibrations are sequentially excited by modulation optical excitation in order to measure the vibrations with a laser Doppler meter.